# What we sought to find out in our PhD studies

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Graduates are seen during the 73rd graduation of Makerere University on February 13, 2023. PHOTO/HANDOUT

By [Damali Mukhaye](https://www.monitor.co.ug/uganda/damali-mukhaye-1935916)

## What you need to know:

* More PhD students from the College of Education and Agriculture were among the second batch of graduates at Makerere University yesterday.
* A total of 13,221 graduands, 6,809 (52 percent) females and 6,412 (48 percent) males, are expected to graduate during the university’s 73rd graduation ceremony which ends on Friday.
* The 26 from the two colleges are among the 102 who are graduating, writes **Damali Mukhaye**.

**Dr Lenah Leatitiah Namubiru (PhD in Agriculture)**  
She examined food control in Uganda: A Case of the Rice Value Chain.  The study investigated the effectiveness of the food control system on the rice value chain of Uganda.

The study revealed that the imported rice was more contaminated compared to locally grown rice and that the food law in Uganda should be amended for better food control.

Food handlers were knowledgeable about aflatoxin and pesticides but not heavy metals.   
This study revealed that there is a potential cancer-causing risk from consumption of rice in both infants and adults at the current level of contamination.

**Dr Graceline Akongo (PhD in Agriculture)**  
She studied the effects of Climate Variability on Rainfed Rice Production: A Case study of the Northern Farming System Agroecological Zone of Uganda.

Using a four-year climate and production panel data, her study revealed that each rice production system responds to prevailing climatic conditions differently.

For instance, the efficiency model exhibited a downward trend at an annual rate of 14 percent and remarkably low yields, confirming the potential threat of climate variability, while the rainfall trend and variability analysis showed a co-efficient of variations exceeding 30 percent.

**Dr Margrate Namugwanya (PhD in Agriculture)**  
She studied mechanisms of adaptation of low soil phosphorus tolerant common beans to water deficit in Nakasongola and Mukono Districts.

The results revealed the outstanding adaptive mechanisms associated with water deficit and low soil phosphorus tolerance in the studied genotypes included morphological responses such as specific leaf area and improved root development and physiological responses such as shortening of physiological activities.

It was however clear that tolerance of the studied genotypes to both water deficit and low soil phosphorus was not essentially translated into corresponding grain yield.

**Dr Jimmy Luyima (PhD in Education)**  
He studied the perceived changing roles of academic deans in Makerere University.   
Academic deans are working in a changing and challenging environment such as financial constraints and political influence.

Academic deans involved in the study perceived their changing roles in Makerere University as complex since they were hectic and multiple.

Those academic deans also reframed their perceived changing roles using the human resource, structural, political and symbolic leadership frames.

Whereas those academic deans reframed mostly using the human resource and structural frames, the political frame was exploited in the science-based disciplines.

Thus, academic deans need to be more intentional in using the political frame through networking and partnerships to solve their financial constraints.

**Dr Jackson Venusto Modi (PhD in Agriculture)**  
Modi studied the role of silicon in mediating resistance towards rice blast in selected rice varieties. The study noted that rice blast, caused by Magnaporthe grisea, is one of the most serious diseases of rice, causing yield losses of 50 – 100 percent in susceptible varieties worldwide. Modi identified resistant germ plasma to rice blast under silicon amendment in Uganda.

In the study, he evaluated 67 rice genotypes for their reaction to Magnaporthe grisea under silicon amendments in a screen house. Of the 67 genotypes, 24 were highly resistant, 22 were resistant and the others were either moderately resistant or susceptible to the disease.

Finally, the study established the relationship between silicon uptake ability and resistance to rice blast resistance. Modi said the use of silicon amendments in fertilisers is recommended to rice growers to help them in management and control of rice blast.

**Dr Norman Kwikiriza (PhD in Agriculture)**  
He studied transaction costs and governance of value chains of organic pineapples from Uganda. The study noted that the current supply of organic pineapples in the global market does not match demand in these markets. It said the export demand for organic pineapples from Uganda is estimated to be 5-10 times higher than the supply.

Kwikiriza’s study identified the transaction costs that limit the amount of organic pineapples exported, and the governance mechanisms that may minimise the transaction costs faced by farmers and exporters. He adds that the proportion of organic pineapple exports can be increased by among others, building trust among farmers and stakeholders in the value chain, favourable legislation, and investment environment.

**Dr Abel Byarugaba Arinaitwe (PhD in Agriculture)**  
He studied Potato viruses in Uganda and prevalence of extant R genes that suppress the effects of virus diseases.

He investigated the viruses that affect potatoes in Uganda and assessed the prevalence of resistance genes that suppress the effects of virus diseases.

The study identified six viruses; PVS strain O, PVX strain X3, PLRV, PVM, PVA and PVY strain which occurred as single infections and in mixed infections.

His study revealed that low altitude areas of Mbarara, Lwengo, Kibaale, Mubende and Pader had high viral disease incidences of 48 percent to 65 percent relative to the areas in the highlands that displayed incidence of 14.6 percent to 40.5 percent.

The study identified five genes (Ryadg, Rysto; Nbtbr, Nsadg and Gmgrl) that have either high or low levels of resistance to four of the viruses.

**Dr Francis Xavier Lubega (PhD in Education Management)**  
He studied school-based reward practices and quality education in secondary schools in Masaka District.   
The study discovered various reward practices whose motivational implications were significant.   
These practices were also related to selected elements of quality education.   
He concluded that teacher-driven school-based reward practices combined with salary enhancement are likely to promote quality teaching and learning.

**Dr Gonzaga Katongole (PhD in Education Management )**  
He studied accountability practices of academic staff and service delivery at Makerere University.   
The study delved into the effectiveness of accountability practices by academic staff in the delivery of programmes.

Overall, the findings show that the students were satisfied with the quality of services they received.   
However, their lecturers’ accountability practices in the areas of teaching and internship were not very effective due to surging student numbers and inadequate facilitation.

The accountability mechanisms of staff in relation to examinations were found to be effective.

**Dr  Chombo Oketcho (PhD in Climate Change Studies)**  
He studied perceptions and vulnerability to climate change in the Kyoga plains of Uganda.   
He studied the variation in smallholder farmers’ perceptions on climate change vulnerability.   
The study also indicated that the level of vulnerability to climate change varied significantly among the farmers in the different subzones of the Kyoga plains; those in the Teso System were more vulnerable than those in the Banana Cotton Millet System.

**Dr Alexander Ssamula (PhD in Agriculture)**  
He studied the factors influencing reversion from virus infection in sweet potato. He noted that sweet potato has over time been used as a crop to alleviate food insecurity and economic challenges among farmers. But diseases especially viruses can completely wipe out the crop.  However, the study said plants have been identified to fight off viral infections in a process called Reversion. It was observed that reversion is dependent on virus type, and environmental factors. Also genes that lead to reversion were established, and it was found that they are heritable.

**Dr Eric Gitta (PhD in Education Management )**  
He studied perceived needs satisfaction and counterproductive workplace behaviour of administrative staff at Makerere University.

He followed a cross-sectional survey design to collect data from a stratified sample of 191 administrative staff out of a target population of 376 staff.

The findings were that, on the whole, need satisfaction is perceived to be fair.   
Therefore, it was concluded that improvement of workplace behaviour among administrators at the university would benefit from improved satisfaction of the administrators.

**Dr Rashid Lukwago (PhD in Education Management)**  
He studied knowledge, attitude and practices of Luganda language educators in using emerging technologies in the School of Education, Makerere University.

The findings revealed that Luganda language educators had positive attitudes and practices towards using emerging technologies, in managing to teach and learning via MUELE, zoom, and the use of language translation machines.    
It, however, said some educators have failed to fully embrace the benefits of emerging technologies in teaching and learning.

**Dr Irene Tamubula Bulenzibuto ((PhD in Agriculture and Rural Innovations)**  
She studied Enhancing acceptance of video content through farmers participation in production of farmer-learning Videos in central Uganda. She examined production of agricultural videos with emphasis on involving farmers in development of video content.

This study established that effective consultations with farmers and agricultural experts throughout the video production process is crucial in ensuring that video content is based on both farmers’ experiences and scientifically proven principles.

However, the extent of participation of farmers in video production processes was impeded by the limited interactions between farmers and other actors, differing expectations, and time constraints.

**Dr Umar Lule Ssonko (PhD in Food Science)**  
He explored the possibility of utilisation of banana waste for starch production.   
Extracts from the cooking and juice type bananas locally known as Gonja and Kivuvu respectively were collected and they showed that the bananas had high antioxidant activity irrespective of whether they were raw or ripe.

The results suggested that banana starch has quality attributes that could give it a place in the commercial starch industry, both as native starch and as modified starch.